

Remarks

Applicant thanks Examiner Yang for kindly extending their representative, Allison Johnson, the courtesy of an in person interview on Tuesday, July 10, 2007. During the interview, Applicant's representative demonstrated that Empedocles et al. do not teach the systems of claims 12 and 13 or the system of claim 30 if the membrane were claimed as surrounding the polymer matrix. Applicant's representative understood the Examiner as agreeing that such an amendment to claim 30 would overcome the current rejection of claim 30 over Empedocles et al. Applicant's representative further understood the Examiner as agreeing that Empedocles et al. does not appear to teach the systems of previously pending claims 12 and 13, now claims 91 and 92.

Claims 30, 47 and 56 have been amended. Claims 66-78 have been canceled. New claims 91 and 92 have been added. Claims 30 and 56 have been amended in an effort to speed prosecution and not for reasons related to patentability. Claim 47 has been amended to correct an inadvertent clerical error. New claims 91 and 92 are claims 12 and 13 rewritten in independent form. Support for the amendments to the claims and the new claims can be found in general throughout Applicant's Specification and in particular, for example, as follows: claim 30, page 10, lines 26-28, claim 56, page 25, lines 14-17 and 28-30, claim 91, original claim 12, claim 92, original claim 13. Applicant reserves the right to prosecute the claims in their original form in a continuing application.

Claims 42 and 47 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 42 and 47 also stand rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements.

Through confirmation from Examiner Yang, Applicant understands that the above-described rejection was intended to be directed to claim 43 as opposed to claim 42. Since claim 43 is not under examination, Applicant addresses the rejection as it pertains to claim 47. Claim 47 depends from claim 30 and further specifies that the processor is programmed with code to receive data corresponding to a first  $I(\lambda_1)$ , a second  $I(\lambda_2)$ , and a third  $I(\lambda_B)$  intensity measured at a first  $(\lambda_1)$ , a second  $(\lambda_2)$ , and a third  $(\lambda_B)$  wavelength, respectively, correct the intensity at the first wavelength  $I(\lambda_1)$  based on the third

fluorescence intensity  $I(\lambda_B)$  and a first set of three predetermined correction functions  $D(\lambda_1)$ ,  $A(\lambda_1)$ ,  $B(\lambda_1)$ , and correct the intensity at the second wavelength  $I(\lambda_2)$  based on the intensity at the third wavelength  $I(\lambda_3)$  and a second set of predetermined correction functions  $D(\lambda_2)$ ,  $A(\lambda_2)$ ,  $B(\lambda_2)$ . According to the May 2, 2007 Office action, “the omitted elements are: the steps that recite how to correct the intensity at the first and second wavelengths based on predetermined correction functions, as the functions have not been provided” (May 2<sup>nd</sup> Office action, page 3).

A claim which [*sic*] fails to interrelate essential elements of the invention as defined by applicant(s) in the specification may be rejected under 35 U.S.C. § 112, second paragraph, for failure to point out and distinctly claim the invention. See *In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976); *In re Collier*, 397 F.2d 1003, 158 USPQ 266 (CCPA 1968). *But see* *Ex parte Nolden*, 149 USPQ 378, 380 (Bd. Pat. App. 1965) (“[I]t is not essential to a patentable combination that there be interdependency between the elements of the claimed device or that all the elements operate concurrently toward the desired result”); *Ex parte Huber*, 148 USPQ 447, 448-49 (Bd. Pat. App. 1965) (A claim does not necessarily fail to comply with 35 U.S.C. § 112, second paragraph where the various elements do not function simultaneously, are not directly functionally related, do not directly intercooperate, and/or serve independent purposes.)

Applicant respectfully submits that there is no omission that amounts to a gap between steps in claim 47. The recitation of “predetermined correction functions” does not require the recitation of the actual correction function in the body of the claim. Predetermined means that it has been determined in advance. A predetermined correction function is a correction function that has been determined in advance. Therefore, claim 47 recites the use of three correction functions that have been determined in advance. There is no omission that amounts to a gap in claim 47.

The May 2<sup>nd</sup> Office action asserts that the skilled artisan would not know how to correct the intensity at the first and second wavelengths. This assertion sounds as if it is a rejection based on enablement grounds, i.e., 35 U.S.C. § 112, first paragraph.

Applicant’s Specification teaches how to both obtain a correction function and to correct the intensity of a wavelength based on a correction function such that the skilled artisan

could do so (see, e.g., Applicant's Specification, page 19, line 20-page 20, line 22). Thus, Applicant's Specification satisfies the enablement requirements of 35 U.S.C. § 112, and claim 43 satisfies the definiteness requirements of 35 U.S.C. § 112, second paragraph. Applicant submits, therefore, that the rejection of claim 47 under 35 U.S.C. § 112, second paragraph, is unwarranted and Applicant respectfully requests that it be withdrawn. Should this rejection be maintained, Applicant respectfully requests further clarification as to the basis of the rejection.

Claims 30, 2, 3, 5-8, 14-19, 25, 26, 30-37, 41, 42, 44-47, 56-65, 84-86, 89 and 90 are rejected under 35 U.S.C. § 102(b) over Empedocles et al. (U.S. 2002/0031783).

Empedocles et al. describe a two dimensional spectral imaging system that detects and identifies signals from within a signal area (Empedocles et al., page 1, para. [0003]). More specifically Empedocles et al. describe a system for detecting and identifying spectral barcodes from a sensing area. According to Empedocles et al., the method can be used to identify and track inventories of elements, and in high-throughput assay systems (*Id.*).

Claim 30 is now directed to a system for detecting an analyte where the system includes a sensor adapted to detect the analyte, the sensor including a polymer matrix, fluorophores, and a membrane surrounding the polymer matrix, an excitation source to excite a fluorophore of the sensor, a first detector adapted to detect light of a first wavelength emitted by the sensor, a second detector adapted to detect light of a second wavelength emitted by the sensor, a third detector adapted to detect light of a third wavelength, and a processor for processing signals corresponding to light detected by the detectors and for determining a property of the analyte. Empedocles et al. do not teach a sensor adapted to detect an analyte. Nothing in the record establishes anything to the contrary. Empedocles et al. also do not teach a sensor adapted to detect an analyte that includes a polymer matrix and a membrane. Even so, in an effort to speed prosecution, claim 30 has been amended to recite that the membrane surrounds the polymer matrix. The item of Empedocles et al. identified in the May 2<sup>nd</sup> Office action as being a membrane is a 7 micron layer of parylene on a glass surface that has been ablated to form 7 micron deep wells. The layer of parylene of Empedocles et al. does not surround a polymer matrix. Empedocles et al. thus do not teach a sensor that includes a membrane

surrounding a polymer matrix. Applicant submits, therefore, that the rejection of claim 30 under 35 U.S.C. § 102(b) over Empedocles et al. has been overcome, and respectfully request that it be withdrawn.

Claims 2, 3, 5-8, 14-19, 25, 26, 30-37, 41, 42, 44-47, 84-86, 89 and 90 are distinguishable under 35 U.S.C. § 102(b) over Empedocles et al. for at least the reasons set forth above in distinguishing claim 30.

Claim 56 is now directed to a device that includes a detector-emitter array for detecting an analyte that includes an excitation source adapted to excite a fluorophore of a sensor that includes fluorophores, and a chip that includes a first detector adapted to detect fluorescence light of a first wavelength emitted by the sensor, a second detector adapted to detect fluorescence light of a second wavelength emitted by the sensor, and a third detector adapted to detect light of a third wavelength, the excitation source being coupled to the chip. Empedocles et al. do not teach a detector-emitter array that includes an excitation source adapted to excite a fluorophore of a sensor that includes fluorophores, and a chip that includes a first detector adapted to detect fluorescence light of a first wavelength emitted by the sensor, a second detector adapted to detect fluorescence light of a second wavelength emitted by the sensor, and a third detector adapted to detect light of a third wavelength, the excitation source being coupled to the chip. Empedocles et al. do not teach a chip that includes detectors. Empedocles et al. also do not teach an excitation source coupled to a chip that includes detectors. Applicant submits, therefore, that the rejection of claim 56 under 35 U.S.C. § 102(b) over Empedocles et al. has been overcome, and respectfully request that it be withdrawn.

Claims 57-65 are distinguishable under 35 U.S.C. § 102(b) over Empedocles et al. for at least the reasons set forth above in distinguishing claim 56.

Claims 30, 4, 9-19, 22, 24, 28, 29, 38-40, 45, 46, 56, 57, 60-65 and 89 are rejected under 35 U.S.C. § 102(a) and under 35 U.S.C. § 102(e) over Zenhausern (U.S. 2002/0094531).

Zenhausern, which published on July 18, 2002, is directed to an apparatus and method for monitoring, analyzing and discriminating molecular species within a medium (Zenhausern, Abstract).

Under 35 U.S.C. 102(a) a person shall be entitled to a patent unless

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent . . . .

The word “known” in section 102(a) has been interpreted as meaning publicly known. See, e.g., *Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1370 (Fed. Cir. 1998) (“ In order to invalidate a patent based on prior knowledge or use, that knowledge or use must have been available to the public”) *citing Carella v. Starlight Archery*, 804 F.2d 135, 139, 231 U.S.P.Q. 644, 646 (Fed.Cir.1986). There is no evidence of record that the subject matter of Zenhausern was publicly known prior to the filing date of the above-captioned application. Accordingly, a *prima facie* case of anticipation of claim 30 under 35 U.S.C. § 102(a) over Zenhausern has not been shown, and the rejection must be withdrawn. Should this rejection be maintained, Applicant respectfully requests that the next action include evidence establishing that the subject matter of Zenhausern was publicly known prior to the filing date of the above-captioned application.

We now turn to the rejection of claim 30 under 35 U.S.C. § 102(e) as being anticipated by Zenhausern.

Claim 30 is now directed to a system for detecting an analyte that includes a sensor adapted to detect the analyte, the sensor including a polymer matrix, fluorophores, and a membrane surrounding the polymer matrix, an excitation source to excite a fluorophore of the sensor, a first detector adapted to detect light of a first wavelength emitted by the sensor, a second detector adapted to detect light of a second wavelength emitted by the sensor, a third detector adapted to detect light of a third wavelength, and a processor for processing signals corresponding to light detected by the detectors and for determining a property of the analyte. Zenhausern does not teach a sensor adapted to detect an analyte. Zenhausern also does not teach a sensor that is adapted to detect an analyte and that includes a polymer matrix and fluorophores. Even so, in an effort to speed prosecution, claim 30 has been amended to recite that the membrane surrounds the polymer matrix. Zenhausern does not teach a sensor that includes a membrane surrounding a polymer matrix. Zenhausern discloses that transmission element 36 can be a membrane. Transmission element 36 of Zenhausern does not surround a polymer

matrix. Applicant submits, therefore, that the rejection of claim 30 under 35 U.S.C. § 102(e) over Zenhausern has been overcome, and respectfully requests that it be withdrawn.

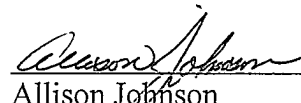
Applicant submits that the rejections of claims 20 and 23 under 35 U.S.C. § 103 over Empedocles et al. in view of Walsh et al. (U.S. 2002/0193672), claims 20, 21 and 23 under 35 U.S.C. § 103 over Empedocles et al. in view of Martin et al. (U.S. 2002/0016535), and claims 20 and 23 under 35 U.S.C. § 103 over Zenhausern in view of Walsh et al., are moot in light of the amendment to claim 30 and respectfully requests that they be withdrawn.

The claims now pending in the application are in condition for allowance and such action is respectfully requested. Applicant invites the Examiner to telephone the undersigned should a teleconference interview facilitate prosecution of the application.

Please charge any additional fees that may be required or credit any overpayment made to Deposit Account No. 501,171.

Respectfully submitted,

Date: August 2, 2007

  
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